

Trends and complications of ear piercing among selected Nigerian population

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ABSTRACT

Background: The reported health and socioeconomic consequences of ear piercing, especially in modern day society, underscore the need to further research into this subject. In this study, we determine the trends and complications of ear piercing among selected Nigerian population. **Aim and Objectives:** The aim and objective of this study was to draw attention to the trends and complications of ear piercing with a view to prevent its associated complications. **Methodology:** It is a descriptive cross-sectional study carried out between February and May 2015 among selected Nigerian population from two of its six geo-political zones. A self-administered semi-structured questionnaire which had been pretested was used to collect data from 458 respondents who consented using multistage sampling technique. **Results:** Of 480 respondents enumerated, 458 completed the questionnaires and gave their biodata. The male:female ratio was 1:6.2. Their ages ranged from 18 to 75 years with a mean of 35.56 ± 10.16 . About 35.4% of the respondents were within the age group of 31–40 years. Majority of the respondents, i.e., 79.3% practiced ear piercing on their children. Most of them (86.8%) preferred single piercing. Ear piercing was performed within the 1st week of birth in 37.2% of the respondents. Large percentage (93.2%) of the respondents will not encourage ear piercing in male children. Nearly 20.5% of the respondents observed complications. **Conclusion:** Ear piercing remained a common practice in Nigeria, with respondents preferring it on females. Majority of the piercings are done in childhood and by untrained personnel. Keloid formation was the notable complication observed by the respondents. There is a need to increase awareness about the hazards of ear piercings and to enact laws that regulate ear piercings particularly in children which is hereby stretched.

Keywords: Complications, ear piercing, Nigerian, population, trends

Introduction

Ear piercing is a worldwide phenomenon. Often, the aim is to create a hole in the ear (pinna) for the insertion of earrings. To many, it is not just a fashion but a passion. In general, ear piercing and use of earrings are practiced for personal and cultural reasons. In ancient Rome, for instance, earrings were worn only by slaves whereas in ancient Greece they were the ornament of prostitutes.^[1] In addition, wealthy Greek and Roman women wore earrings set

with pearls to exhibit their social status.^[1] It is interesting to note that earrings are worn not only by females but also by their male counterparts. As noted among ancient Israelites, earrings were worn by women and children of both sexes. In their journey through the wilderness, it was reported that an idol was carved with earrings collected from women, male and female children.^[2] This suggests that earrings were worn not only by women or female children but also by male children. Indeed, in ancient times, earrings were a predominantly male ornament.^[1] While this practice may have rolled over into the modern day society, in some cultures, earrings are worn only by women, while in some people,

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it is forbidden in both men and women for religious inclination. Although piercing nowadays is being done on almost any part of the body, the ear is still the most common part that is pierced and provides the user with a whole range of styles.^[3] Structurally, the ear (pinna) is a resilient structure that is thrown into folds. It is made up of elastic cartilage except at the lobule where it is made up of fibrofatty tissue.^[4] Both surfaces of the pinna are covered by skin that is sensitive to pain and pressure. The cartilage is avascular^[5] and derives its nutrients from the overlying skin. The skin is supplied with blood from the posterior auricular and superficial temporal arteries. The nerves are the great auricular and auriculotemporal nerves. The cartilaginous folds give the pinna its characteristic shape and can be divided into helix, antihelix, tragus, antitragus, concha, lobule, and superior and inferior crura. The lobule is easily pierced and it is the site most commonly pierced for earrings. Due to its avascularity, it is reasonable to avoid piercing the cartilaginous parts because doing that will not only delay healing, but it may also be infected. In a bid to create uniqueness and outshine others, however, various part of the cartilage are being pierced either singly or in multiples. As outlined by Ayushi, there are top 16 different types of ear piercings based on anatomical positions on the lobule and cartilage. These are standard lobe, upper lobe, auricle, conch, helix, industrial, tragus, rook, snug, orbital, antitragus, daith, graduate lobe, transverse lobe, forward helix, and ear weaving piercings.^[3] Although there are no health reasons for ear piercing,^[6] yet it is associated with various complications.^[7-12] Over the years, the technique of ear piercing has undergone evolution. From the traditional use of needle and thread to the modern day ear piercing guns,^[13] the technique has undergone transformation. In spite of this transformation, however, ear piercing is not without risks. While journals in the developed countries are awash with research on ear piercing, in Nigeria, there are no literatures to inform, educate, or sensitize the people about the health implications of ear piercing. Thus, we embark on this study to provide insight into the trends and complications of ear piercing among the studied population in Nigeria.

Design and Methodology

This is a descriptive cross-sectional study carried out between February and May 2015 among selected Nigerian population from two (South West and North Central) of its six geo-political zones. They reflected the multi-ethnic nature and different social strata (artisan, market, state and federal schools, and establishments) of the Nigerian population. Multistage sampling method was used to select 480 adult male and female respondents for the study. In stage one, two zones (South West and North Central) of its six geo-political zones were selected using simple random sampling method. Stage two involved randomly selecting three states (Ogun, Ekiti, and Niger) from the selected zones. And finally, three local governments were randomly selected from each of the selected states. A self-administered semi-structured questionnaire which had been pretested to ensure validity and reliability was used to collect data from consenting patients

to participate in the study. Inclusion criteria include married adult males and females who gave consent to participate in the study. Those who did not give consent were excluded from the study. Information about their biodata and practices of ear piercing as regard to the type of ear piercing, age at piercing, methods of piercing, importance of ear piercing, and the complications associated with ear piercing was collected. Approval to carry out this study was given by the Institutional Research and Ethical review committee. Data obtained were analyzed using SPSS software version 20.0, and the results were presented in simple descriptive statistics in the form of tables and charts.

Results

Of 480 respondents enumerated and requested to participate in this survey, 458 consented, completed the questionnaires, giving a response rate of 95.4%. About 64 respondents (14.0%) were males and 394 (86.0%) respondents were females giving a male: female ratio of 1:6.2. Their ages ranged from 18 to 75 years with a mean of 35.6 ± 10.2 [Table 1]. The frequency distribution of the sociodemographic characteristics of the respondents is shown in Table 2. Majority (35.4%) of the respondents were within the age group of 31–40 years. About 334 (72.9%) respondents were of the Yoruba ethnicity, 336 (73.4%) were Christians, 298 (65.1%) had tertiary education, and 133 (29.0%) were civil servants. About 363 respondents (79.3%) practiced ear piercing on their children, and majority of them, i.e., 315 (86.8%) preferred single ear piercing. Nearly 37.2% of those respondents who carried out ear piercing on their children performed it within the 1st week of birth. Reasons for performing ear piercing at the chosen age included that the child will not be aware of the pain in 174 respondents (47.9%), soft ear/tissue in 83 respondents (22.9%), for quick healing in 20 respondents (5.5%), to seek consent from grown-up child in 10 (2.8%) cases while 76 (20.9%) respondents gave no reason. Various methods used by the respondents who practiced ear piercing were using earring in 258 (71.0%), needle and thread in 84 (23.0%), while 21 (6.0%) used the piercing gun [Figure 1]. The importance of ear piercing was for beautification in 180 respondents (39.3%), sex identification in 81 respondents (17.7%), cultural practice in 35 respondents (7.6%), while 162 (35.4%) respondents did not attach any importance to ear piercing. Concerning religion being against ear piercing, majority (73.4%) said no, 21.4% said yes, while 5.2% were not sure. Large percentage (93.2%)

Table 1: Age and sex distribution of the respondents

Age range (years)	Sex of respondents		Total, n (%)
	Male, n (%)	Female, n (%)	
0-20	2 (0.4)	37 (8.1)	39 (8.5)
21-30	11 (2.4)	115 (25.1)	126 (27.5)
31-40	27 (5.9)	135 (29.5)	162 (35.4)
41-50	20 (4.4)	81 (17.7)	101 (22.1)
51-60	3 (0.7)	23 (5.0)	26 (5.7)
>60	1 (0.2)	3 (0.7)	4 (0.9)
Total	64 (14.0)	394 (86.0)	458 (100.0)

Table 2: Socio-demographic characteristics of respondents' and their response to questions on ear piercing

Category	Frequency (n=458)	Percentage
Ethnicity		
Yoruba	334	72.9
Hausa	26	5.7
Ibo	37	8.1
Others	61	13.3
Religion		
Christianity	336	73.4
Islam	112	24.5
Traditional	10	2.2
Education		
No formal education	14	3.1
Primary	32	7.0
Secondary	114	24.9
Tertiary	298	65.1
Occupation		
Unemployed	120	26.2
Farming	33	7.2
Teaching	109	23.8
Trading/business	63	13.8
Civil servants	133	29.0
Support ear piercing		
Yes	363	79.3
No	95	20.7
Support male ear piercing		
Yes	31	6.8
No	427	93.2
Religion against ear piercing		
Yes	98	21.4
No	336	73.4
Not sure	24	5.2
Category	Frequency (n=363)	Percentage
Type of ear piercing		
Single	315	86.8
Multiple	48	13.2
Age at ear piercing		
1 st week	135	37.2
1-4 weeks	107	29.5
1-6 months	56	15.4
6-1 year	53	14.6
>1 year	12	3.3

of the respondents did not encourage ear piercing in male children. Only 94 (20.5%) respondents observed complications arising from ear piercing. The complications observed were keloid/hypertrophic scars in 45 respondents (47.9%), ear pain 14 respondents (14.9%), infection in 13 respondents (13.8%), cleft ear lobe in 8 respondents (8.5%) other ear deformity in 4 respondents (4.3%), bleeding in 7 respondents (7.4%), while 3 respondents (3.2%) had embedded earring [Figure 2].

Discussion

This study showed that majority of our respondents were within the age of 31–40 years accounting for 35.4%, and 86.0% of the respondents were females. Females generally practice ear piercing

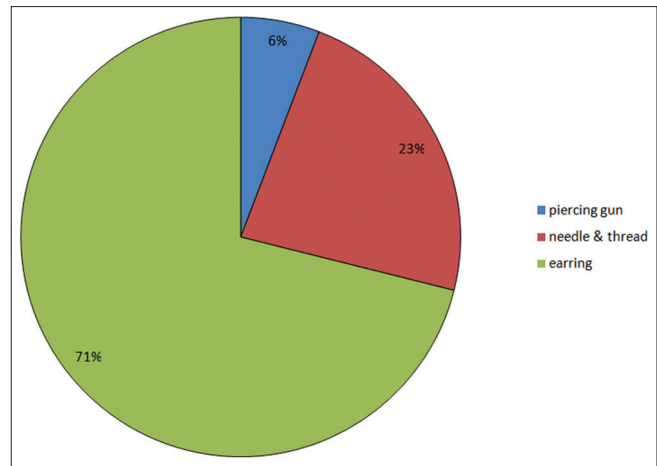


Figure 1: Methods of ear piercing

more than their male counterparts. Sosin *et al.* also recorded 87.5% of female participants in a similar study.^[14] In India, body piercing is almost a routine procedure in females, and the most commonly pierced sites are ears and nose.^[15] A large number (79.3%) of our respondents carried out ear piercing on their children and majority of them (68.8%) however preferred single rather than multiple ear piercings where the site goes beyond ear lobule. In our study, piercing of ear was usually done within the 1st week of birth in about 37.2% of our respondents. Reasons for early piercing were to reduce pain and to gain maximum cooperation of the child since the tissue of the ear is still soft at that tender age and pierceable by the instruments, particularly earrings being used by some of our respondents. Another reason is for quick healing which may prevent complication. As observed from their study, Lane *et al.*^[16] suggested that ear piercing should be done in infancy or early childhood or perhaps not at all, especially in families who are keloid prone.^[16] Various reasons have been adduced to ear piercing and wearing of earrings in our study; these include beautification, sex identification, and culture. About 35.4% of our respondents however did not attach any importance to it. Religion inclination prevented some individuals from ear piercing which, in turn, prevented them from wearing earrings. In our study, about 21.4% of the respondents fell into such category. Majority (93.2%) of the respondents in this study did not encourage ear piercing in their male children. This buttresses the fact that ear piercing is mainly a female practice. A large proportion of our respondents, i.e., 71.0% used new earring for piercing, as this seemed to be readily available and cheaper. About 6.0% of our respondents used piercing guns as also reported from other studies.^[8,17,18] Needle and threads were used mainly by local community dwellers and this constituted 23.0% in this study. There is no regulation as to the practice of ear piercing in Nigeria. Piercing practitioners were insufficiently aware of ear cartilage piercing complication.^[19] In addition, operators of cosmetic shops, earring kiosks, and tattoo parlours may not be aware of the risks of ear piercing. In India, piercing is usually done by neighborhood barber, jeweler, or in beauty parlors. Invariably, such piercing usually would not follow aseptic measures or necessary precautions and hence, complications are

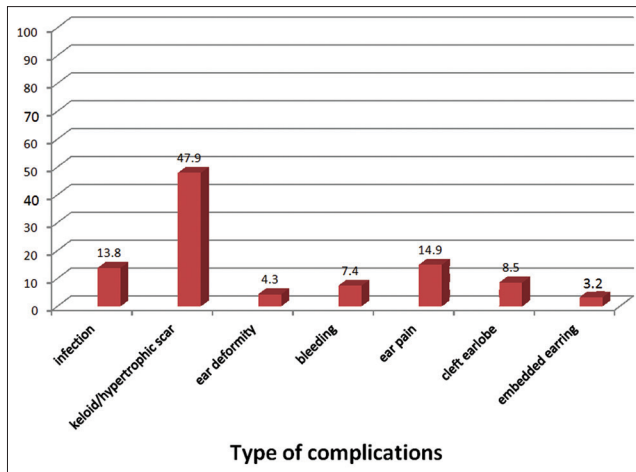


Figure 2: Complications observed by respondents

not uncommon.^[15] Only 20.5% of our respondents observed complications from ear piercing. Keloids/hypertrophic scars, infections, ear deformity, and cleft earlobes were the common complications seen by our respondents in this study. Other authors have also recorded similar findings in their studies.^[14,17,20-24] Other complications that may follow ear piercing include bleeding, embedded earring, and ear pain, as recorded in this study. Kumar *et al.*^[15] reported a case of lupus vulgaris of both ears following ear piercing of a young girl. Although lupus vulgaris in children is mostly seen on trauma-prone parts usually on legs, knees, thighs, buttocks, and feet,^[25] other sites may be affected depending on the site of inoculation of infective agent. Thakur *et al.*^[26] reported lupus vulgaris at *Bacillus Calmette–Guerin* vaccination site. The ear lobule is the most frequent site to be pierced and it is usually free from complications.^[15] However, Fijalkowska *et al.*^[19] noted some complications with ear lobule piercing. Complications occur more with high cartilage ear piercing, especially when it is multiple which has now gained popularity. These piercings are associated with poor healing and more serious infection because of the avascular nature of the auricular cartilage.^[8,14,17,18,24,25,27,28] Use of piercing gun as a cause of complication following ear piercing has been reported by various authors.^[8,17,18] Lane *et al.*^[16] noted that keloids are more likely to develop when ears are pierced after the age of 11 years than before this age, especially for patients with a family history of keloids. Given the difficulty and cost of treating keloids, prevention is the optimal approach. Patients with a family history of keloids should consider not having ear piercings. If piercing is nonnegotiable, a suggestion that piercing during infancy or early childhood should be considered. Jewelry worn after piercing may be associated with complications and may cause allergic contact dermatitis in susceptible persons, most frequently due to its nickel content.^[15] Heavier jewelry, due to constant stretching, often causes elongated piercing tracts or even cleft/torn earlobes, which may require surgical repair.^[15] Vitiligo and psoriasis may develop at trauma site.^[15] However, this was not found in our study. Although blood-transmitted diseases such as hepatitis and human immunodeficiency virus have been reported by other authors, it is beyond the scope of this study. Other risk factors for complications include inexperienced piercer, poor

hygiene, trauma to the ear, delayed care of a complication, and comorbid conditions such as atopy, bleeding disorders, diabetes, and immunodeficiency.^[29] To avoid complications, ear piercing should be practiced in strict aseptic conditions using sterile instruments. Jewelry should be hypoallergenic.^[15]

Some limitations are noticeable in this study. The fact that findings from only two out of the six geo-political zones in Nigeria may not adequately represent what obtained in the whole country is acknowledged. Furthermore, respondents are prone to misunderstanding questions and recall bias in answering the questions, and lack of follow-up questions may also limit the validity of the findings.

Conclusion

The trends observed in this study were that ear piercing remained a common practice, with respondents preferring it on females, in single pierces on the ear lobule, and at earlier ages, generally <6 months in children. About one in five of the respondents had observed complications, notably keloid formation. Suggestions on how to reduce complications by practicing at younger ages and the need to enact laws that regulate ear piercings particularly in children were stretched.

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Conflicts of interest

There are no conflicts of interest.

References

1. The History of Earrings. Available from: <http://www.jewellerypassion.net/the-history-of-earrings/>. [Last accessed on 2016 Mar 22].
2. King James. The book of Exodus. In: The Holy Bible. Vs 1-4, Chap 32. KJV. Brazil. Bible Society of Brazil. 2004. p. 67-121.
3. Khemka A. Top 16 Different Types of Ear Piercing. Available from: <http://www.listsurge.com/top-16-different-types-of-ear-piercings/>. [Last accessed on 2016 Apr 22].
4. Chummy SS. External Ear. In: Last's Anatomy - Regional and Applied. 12th ed.. Uk: Churchill Livingstone; 2011. p. 413-4.
5. Wheater PR, Burkitt HG, Daniels VG. Skeletal tissue-cartilage. In: Functional Histology. 2nd ed.. Uk: Churchill Livingstone; 1987. p. 142-4.
6. Medical Ear Piercing. Available from: <http://www.medicalearpiercing.com/faqs/>. [Last accessed on 2016 Apr 22].
7. Eckhardt LR, Haug S, Nielsen KO. Perichondritis caused by high ear piercing. Therapeutic and legal aspects. *Ugeskr Laeger* 2002;164:5144-5.
8. More DR, Seidel JS, Bryan PA. Ear-piercing techniques as a cause of auricular chondritis. *Pediatr Emerg Care* 1999;15:189-92.
9. Andersen HT. Ear piercing and auricular chondritis caused by *Pseudomonas aeruginosa*. *Ugeskr Laeger* 2002;164:5145-7.

10. Cumberworth VL, Hogarth TB. Hazards of ear-piercing procedures which traverse cartilage: A report of *Pseudomonas* perichondritis and review of other complications. *Br J Clin Pract* 1990;44:512-3.
11. Janssen K, Kon M. Three patients with complications following piercing of the auricular cartilage. *Ned Tijdschr Geneesk* 2004;148:1351-4.
12. Margulis A, Bauer BS, Alizadeh K. Ear reconstruction after auricular chondritis secondary to ear piercing. *Plast Reconstr Surg* 2003;111:891-7.
13. Ear Piercing Gun. Available from: https://www.en.wikipedia.org/wiki/Ear_piercing_instrument. [Last accessed on 2016 Apr 28].
14. Sosin M, Weissler JM, Pulcrano M, Rodriguez ED. Transcartilaginous ear piercing and infectious complications: A systematic review and critical analysis of outcomes. *Laryngoscope* 2015;125:1827-34.
15. Kumar P, Mondal A, Lal NR, Gharami RC. Lupus vulgaris in a child: A complication of ear piercing. *Indian J Dermatol Venereol Leprol* 2014;80:97.
16. Lane JE, Waller JL, Davis LS. Relationship between age of ear piercing and keloid formation. *Pediatrics* 2005;115:1312-4.
17. Sandhu A, Gross M, Wylie J, Van Caesele P, Plourde P. *Pseudomonas aeruginosa* necrotizing chondritis complicating high helical ear piercing case report: Clinical and public health perspectives. *Can J Public Health* 2007;98:74-7.
18. Keene WE, Markum AC, Samadpour M. Outbreak of *Pseudomonas aeruginosa* infections caused by commercial piercing of upper ear cartilage. *JAMA* 2004;291:981-5.
19. Fijalkowska M, Kasielska A, Antoszewski B. Variety of complications after auricle piercing. *Int J Dermatol* 2014;53:952-5.
20. Mandavia R, Kapoor K, Ouyang J, Osmani H. Evaluating ear cartilage piercing practices in London, UK. *J Laryngol Otol* 2014;128:508-11.
21. Zuber TJ, DeWitt DE. Earlobe keloids. *Am Fam Physician* 1994;49:1835-41.
22. Adigun IA, Aderibigbe AB. Earlobe keloids: Emerging cosmetic complication of ear-piercing. *Nig Q J Hosp Med* 2010;20:97-100.
23. Bashir MM, Afzal S, Khan FA, Abbas M. Factors associated with postpiercing auricular cartilage keloids. *J Coll Physicians Surg Pak* 2011;21:606-10.
24. Liu ZW, Chokkalingam P. Piercing associated perichondritis of the pinna: Are we treating it correctly? *J Laryngol Otol* 2013;127:505-8.
25. Singal A, Sonthalia S. Cutaneous tuberculosis in children: The Indian perspective. *Indian J Dermatol Venereol Leprol* 2010;76:494-503.
26. Thakur BK, Verma S. BCG-induced lupus vulgaris complicated by squamous cell carcinoma in a 7-year-old child. *Int J Dermatol* 2011;50:542-5.
27. Stewart GM, Thorp A, Brown L. Perichondritis - A complication of high ear piercing. *Pediatr Emerg Care* 2006;22:804-6.
28. Meltzer DI. Complications of body piercing. *Am Fam Physician* 2005;72:2029-34.
29. Complications of an Ear Piercing. Available from: <http://www.dev.medicalalgorithms.com/complications-of-an-ear-piercing>. [Last accessed on 2016 May 10].